Features

Signal IAMs provide additional selective signaling for Simplex® 4100ES, 4010ES, 4100U, and 4008 Series fire alarm control panels:

- Signal output notification appliance circuit (NAC) wiring is supervised and connected to the signal input under IDNet communications control
- NAC output is rated 0.5 A for Special Application or Regulated 24 VDC Appliances, or for audio operation (12.5 W @ 25 VRMS, 35 W @ 70.7 VRMS); and can be wired Class B or Class A; see additional information on page 2, specifications section
- Signal coding of horn/strobe control, strobe synchronization, or other coding is provided by the signal input; coding at the Signal IAM via IDNet addressable communications is not supported
- 4100U compatibility requires Software Revision 11.11.01 or higher; also compatible with 4100ES, 4100U and 4010ES IDNet+
- Signal IAMs are not compatible with 4010 fire alarm control panels IDNet communications

Supervision features:

- Relay contacts isolate signal inputs from outputs during supervision and do not monitor signal presence; signal inputs sources will need to be monitored separately
- During supervision, signal outputs are isolated from signal inputs by open contacts allowing consideration for use with SCIF applications (Sensitive Compartmented Information Facilities)

Operation details:

- Signal IAM operation is powered and supervised by the IDNet addressable communications loop – separate 24 VDC is not required for the IAM – separate signal power is required for the on-board NAC
- Signal IAM communications use a single physical address; however, each Signal IAM reduces the IDNet loop capacity by two addresses to accommodate the extra power required for output NAC supervision

Compact construction:

- Mounts in standard 4” square electrical box
- Visible LED flashes to indicate communications
- Optional covers are available to allow LED to be viewed after installation
- Screw terminals for wiring connections

UL Listed to Standard 864

* This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listings 7300-0026:319, 7165-0026:251, 7165-0026:318, and 7170-0026:250 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. Additional listings may be applicable, contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

Description

Additional NAC Operation. For applications requiring additional individual NAC supervision and control, the 4090-9007 Signal IAM provides a 0.5 A remote NAC under host panel addressable point control. IDNet communications monitor the Signal IAM status and then connects the output NAC to the separate signal input for local alarm notification.

NOTE: The Signal IAM provides additional NACs to the host control panel, it does not provide additional power. Refer to the diagram on page 3 for additional system requirements.

Audio Control. The Signal IAM also allows the control panel to use IDNet communications to control audio circuits from a compatible Simplex audio control panel. Only one signal source is used per Signal IAM, separate Signal IAMs would be required for control of DC powered appliances such as strobes.

NOTE: Firefighter phone circuits are not supported.

Application Reference

Selective Signaling. Use Signal IAMs to provide additional local area notification zones per applicable version of NFPA 72 (the National Fire Alarm and Signaling Code), local codes and system requirements.

General Signaling. Use Signal IAMs to connect to higher current appliances (rated output is 0.5 A).

For retrofit of Class B NAC wiring, where only two wires are available, in/out connections can be made at the Signal IAM maintaining appliance wiring supervision per applicable version of NFPA 72 and local codes.

NOTE: Signal IAM operation is programmed at the fire alarm control panel per system requirements.

Wiring Requirements

Wire Signal IAMs with both IDNet communications and signal/NAC input to the latest requirements of UL 864, and to NFPA 72 per local code. Please refer to the diagram on page 3 for additional information.
### Product Selection

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<th>Model</th>
<th>Description</th>
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<tbody>
<tr>
<td>4090-9007</td>
<td>Signal IAM; programming types are hardware type SIGNAL for 4008; device type SIGIAM for 4100ES/4100U/4010ES</td>
</tr>
<tr>
<td>4090-9801</td>
<td>For semi-flush mounted box Optional trim plate with LED viewing window, includes mounting screws; galvanized steel</td>
</tr>
<tr>
<td>4090-9802</td>
<td>For surface mounted box</td>
</tr>
<tr>
<td>4090-9116</td>
<td>IDNet Communications Isolator; may be required for loop connections to Signal IAM (see diagram on page 3); refer to data sheet S4090-0005 for details</td>
</tr>
<tr>
<td>4081-9008</td>
<td>End-of-line resistor for Signal IAM NAC output when wired Class B; 10 kΩ, 1/2 W; (ref. 733-894)</td>
</tr>
<tr>
<td>2081-9044</td>
<td>Overvoltage Protector; for up to 200 mA DC or IDNet communications; required where wiring exits and enters a building; refer to data sheet S2081-0016 for details</td>
</tr>
</tbody>
</table>

### Specifications

#### Electrical

- **Communications**: 4100ES/4100U/4010ES or 4008 IDNet, one address
- **Channel Loading**: Consumes two unit loads (each Signal IAM reduces the IDNet loop capacity by two addresses); refer to the IDNet source for the total available address capacity
- **NAC Input Choices**: Nominal 24 VDC from control panel NAC or NAC extender
- **NAC Output Ratings**: Special Application or Regulated 24 VDC Appliances = 0.5 A
- **Appliance Compatibility Details**: Compatible with Simplex strobe synchronization; not compatible with SmartSync 2-wire horn/strobe control or with TrueAlert addressable control; for horn/strobe appliance applications, use 4-wire appliances (see data sheet S4903-0011), for horn control, select horn operation as free-run
- **Wiring Connections**: Screw terminals for in/out wiring, 18 to 12 AWG wire (0.82 mm² to 3.31 mm²)

#### Mechanical

- **Dimensions**: 4" x 4-1/8" x 1-1/4" D (102 mm x 105 mm x 32 mm)
- **Temperature Range**: 32° to 120° F (0° to 49° C) indoor operation only
- **Humidity Range**: Up to 93% RH at 100° F (38° C)

### Additional Information

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<tr>
<td>Installation Instructions</td>
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<td>4003EC Voice/Audio Panel</td>
<td>S4003-0002</td>
<td>4008 Control Panel</td>
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<td>4100ES Basic</td>
<td>S4100-0031</td>
<td>4090-9116 IDNet Isolator</td>
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<td>4010ES Control Panel</td>
<td>S4010-0004</td>
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<tr>
<td>4100ES Audio</td>
<td>S4100-0034</td>
<td>4098-9793 Isolator Base</td>
<td>S4098-0025</td>
<td>4010ES Control Panel (International)</td>
<td>S4010-0006</td>
</tr>
</tbody>
</table>
One-Line Wiring Reference

**Wiring Reference Notes:**

1. To determine the required NAC and IDNet wiring performance and survivability requirements, circuit classes, and placement and quantity of isolators, refer to the applicable system specifications and/or adopted fire code.

2. This reference wiring diagram shows a Class A signal riser providing input to each Signal IAM, and a Class A IDNet signaling line circuit (SLC) for control of the Signal IAMs. The IDNet SLC also is shown with short circuit isolation devices.

3. **Note:** Signal Riser wiring is in/out, no "T-tapping" is allowed.

**Area 2**

- **Horn/Strobe (A/V)**
- **Horn**
- **Strobe (V/O)**

**Area 3**

**Area 1**

- **Typical audible and visible notification appliances, see A/V note**
- **Return wiring for Class A operation**
- **End of line resistor for Class B operation**

When IDNet SLC isolation is required, use 4090-9116 IDNet addressable isolators or 4098-9793 IDNet isolator sensor bases.

Class A IDNet Riser with "T-tapped" branch connections shown; can be wired in/out at Signal IAM if desired **NOTE:** If isolators are used, the first and last isolators are recommended to be close nippled (in conduit and within 20 ft (6 m) of the panel); not necessary when using the 4100-3107 IDNet+ module.

**IDNet communications and NAC source**

**Alternate NAC sources (drawings are not to scale)**

**4008 Fire Alarm Control Panel**

**4003EC Voice Control Panel**

**4009 IDNet NAC Extender**

**Remote NAC Extender**

**4008 NOTE:** The 4008 controls the output NACs of these external panels by wired (not IDNet) connections to its NAC outputs; refer to individual panel installation instructions for details.

**4100ES/4100U/4010ES NOTES:** For use with 4100ES, 4100U, or 4010ES fire alarm control panels, 4009 IDNet NAC Extenders are controlled by IDNet communications and audio signals are typically provided by the 4100ES or 4100U system audio NACs.

**A/V Note:** Use 4-Wire A/Vs (not SmartSync control) with the 4090-9007:

- 4903-9425, 4903-9426
- 4903-9427, 4903-9431
- 4903-9732, 4903-9433

**4008 Fire Alarm Control Panel**

**4003EC Voice Control Panel**

**Remote NAC Extender**

**4100ES, 4100U, or 4010ES Fire Alarm Control Panel**
Mounting Box (by others): Square box, 4" (102 mm),
required depth depends on total conductor requirements
Minimum depth = 2-1/8" (54 mm), RACO 232 or equal
Extended depth (for maximum conductors), add 1-1/2"
(38 mm) extension ring, RACO 201 or equal

Mounting Reference with 4" Square Blank Cover Plate

4090-9801, Trim plate for
semi-flush mounted box

4090-9802, Trim plate for
surface mounted box

Optional Trim Plates for Visible LED